

**TH-57A FLIGHT CONTROLS SYSTEM TRAINER, DEVICE 2A35****TRAINING CATEGORY:**

AVIATION (Aircraft Systems)

**ORIGINATING AGENCY:**

DCNO/AIR

**SECURITY CLASSIFICATION:**

Device 2A35 is unclassified.

**INTENDED USE:**

The device is to be used to familiarize helicopter pilot trainees with correlation of the rotors, transmission, flight controls, hydraulic power, and pilot input of the TH-57A Helicopter.

**FUNCTIONAL DESCRIPTION:**

Device 2A35 is composed of a trainer and an instructor's control box. The trainer simulates helicopter operation by faithfully reproducing the control systems from the directional control pedals, cyclic and collective control sticks

through all interconnecting push rods, bellcranks and actuators to the rotor blades. The companion hydraulic system provides power for the boost actuators at the same rates as in the aircraft when operating at rated rpm and the force trim system provides realistic feel and trim simulation. The rotor gear boxes, drive shafts, and rotor blades are operational, and rotate the rotors at reduced rates.

The instructor's control box is a portable unit which allows the instructor to energize the electrical and hydraulic systems in the trainer from a remote location.

**PHYSICAL INFORMATION:**

Size: 180" L x 108" W x 122" H  
The over-all height on the panel stand is 84".  
Weight: 585 lbs

Swivel casters are provided on the base assembly so the device can be rolled about on the classroom floor. Four (4) leveling jacks are mounted on the base assembly to prevent the trainer from rolling about the classroom during operation.

## DIRECTORY OF NAVAL TRAINING DEVICES

Two cables (classroom outlet-to-trainer and trainer-to-instruction's control box) are furnished with the trainer.

## ENVIRONMENTAL CHARACTERISTICS:

The following requirements must be met by the facility:

Temperature Range:	40° F to 125° F
Relative Humidity:	50% to 95%
Atmospheric Pressure:	Sea level to 15,000 (30 to 17" high)
Floor Loading:	30 lbs. per sq. ft.
Lighting:	Indirect glare-free
Air Conditioning:	Not required
Heating/Ventilation:	Forced air heating or ventilation system.
Hydraulic Pump Duty Cycle:	10% on

## EQUIPMENT REQUIRED (NOT SUPPLIED):

Mast Holding Fixture Wrench; Mast Bearing Nut Wrench; Transmission Case Nut Wrench; Gearshaft Nut Wrench; Bearing Installation and Removal Plug; Bearing Removal Plate Assembly; Planetary Shaft Sleeve; Pinion Installation and Removal Tool; Main Transmission Holding Fixture; Main Transmission Backlash Tool; Tail Rotor Spline Wrench; 90-Degree Gear Box Case Nut Wrench; Tail Rotor Shaft Nut Wrench; Main Rotor Centering Tool; Tail Rotor Blade Roll Skate Tool; Beaming Roll Skate Tool Kit.

## INSTALLATION AREA:

- Length (from front of base assembly to tail rotor): 180"
- Width (diameter of main rotor): 180"
- Height (with main rotor at full 15 degree tilt): 122"

## POWER REQUIREMENTS:

115/230 VAC  $\pm$  105, 60 Hz  $\pm$  5%, single phase, 2300 watts.

26 VAC  $\pm$  10%, 60 Hz  $\pm$  5%, single phase, 30 watts.

## PUBLICATIONS FURNISHED:

Maintenance Instructions with Parts List for TH-57A Helicopter Flight Controls and Systems Trainer, Device 2A35 NAVTRADEV P-3718.

## PERSONNEL:

Instructors:	One (1)
Trainees:	One (1)
Maintenance Men:	One (1)

## CONTRACT IDENTIFICATION:

Manufactured by Hydrosystems Inc., Farmingdale, NY under NAVTRASYSCEN Contract No. N61339-70-C-0176.

## LOCAL STOCK NUMBER:

6930-LL-C00-1046